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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,539	03/27/2006	Henryk Frenzel	2003P12502	7154
24131 7590 09/19/2008 LERNER GREENBERG STEMER LLP P O BOX 2480 HOLLYWOOD, FL 33022-2480				
EXAMINER				
CHIEH, DINH D				
ART UNIT		PAPER NUMBER		
2883				
MAIL DATE		DELIVERY MODE		
09/19/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/573,539

**Applicant(s)**

FRENZEL, HENRYK

**Examiner**

ERIN D. CHIEM

**Art Unit**

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-21 and 23-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-21 and 23-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This office action is in response to applicant's submission of the Request for Continued Examination on August 15, 2008. Currently, claims 14-21 and 23-33. The amendment to claim 14 overcame the 102 rejection of Yamada and new ground(s) of rejection in view of Yamada and Shinomiya.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-19, 21, 23-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (US 2001/0050717 A1) in view of Shinomiya (DE-10221892-A1).

Regarding claim 14, 32-33 Yamada discloses an optical module comprising: a circuit carrier (5), a non-packaged semiconductor device flip-chip mounted (Para [0042]) on said circuit carrier, a lens unit (2) disposed for projecting electromagnetic radiation onto said semiconductor device, said lens unit including a lens holder and a lens assembly with at least one lens (3), and said circuit carrier having at least one relatively thin region and a relatively thick region supporting said thin region ('21', '5'). The thin region and the thick region are implemented as a molded interconnect device with integrated conductor tracks (printed circuit board), wherein the thin region is a flexible circuit board and the thick region is a rigid printed circuit board (Para

[0041]-[0044]). The structures of the thin and thick region are present in the prior art. The limitations of a molded interconnect has been identified as a Product-by-Process limitation. The thick and thin regions are connected at junction [29]. How these regions are formed does not bare patentable weight because this is a device claim.

However, Yamada does not disclose the semiconductor device being disposed on an opposite side of said circuit carrier with respect to said lens holder and in said thin region of said circuit carrier.

Shinomiya discloses in Fig. 11 and 12 a solid state image pick up device wherein a semiconductor device is being disposed on an opposite side of said circuit carrier with respect to said lens holder and in said thin region of said circuit carrier. It would have been obvious to one having ordinary skill in the art to recognize the disclosure of Shinomiya would be understood and modifiable with the art of Yamada wherein the motivation to modify the art of Yamada is to increase mechanical bond between the lens holder and semiconductor with said circuit carrier.

Regarding claim 15, the lens holder is shown in Fig. 2 wherein the lens holder is *supported* in said thin region of said circuit carrier.

Regarding claims 24-29, examiner considers the screws formed in the layer labeled '21' of Fig. 3 to be support elements such that the support elements at least partially formed on said lens holder which is mounted on the circuit carrier, thus the circuit carrier forms a part of said lens unit..

Regarding claim 30, wherein the semiconductor device is disposed on a side of said circuit carrier facing *away* from said lens unit and the thin region of the circuit carrier is formed

with an opening enabling through projection of electromagnetic radiation from said lens assembly onto said semiconductor device (See figs.9, 11, 12-15, and 18 for example).

Regarding claim 31, wherein the optical system comprising at least one optical module according to claim 14, see Fig. 20.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada and Shinomiya as applied to claim 1 above, and further in view of Kothmeier (US 2003/0193609 A1). Yamada and Shinomiya do not explicitly disclose the circuit carrier thick region is a rigid portion of an FR4 circuit board. Kothmeier discloses an optical carrier and housing arrangement for receiving a color splitter system and several image converters utilizes an optical carrier comprising of a FR4 (flame resistance 4) circuit board. The motivation for utilizing FR4 circuit board is a convention in the art of electronics as disclosed by Kothmeier (Para [0016]).

***Conclusion***

Applicant's amendment to claim 14 overcame the rejection of Yamada and examiner provided new grounds of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIN D. CHIEM whose telephone number is (571)272-3102. The examiner can normally be reached on Monday - Thursday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Erin D Chiem/  
Examiner, Art Unit 2883

/Frank G Font/  
Supervisory Patent Examiner, Art Unit 2883